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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,550	04/03/2006	Takashi Ishikawa	28907US0XPCT	4108

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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REDDY, KARUNA P

ART UNIT	PAPER NUMBER
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1713

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/06/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/06/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

**Application No.**

10/574,550

**Applicant(s)**

ISHIKAWA ET AL.

**Examiner**

Karuna P. Reddy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/28/2006.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The amended specification of the disclosure is objected to because, subject matter corresponding to the "Durability of coated film ...." is located in paragraph [0171] on page 49. Correction is required.

### ***Claim Objections***

2. Claims 1-2, 4-6 and 8 are objected to because of the following informalities: In claim 4-6, delete "any one of" since they are dependent only on claim 1. In claim 8, "wherein..... monomper (A) ....." should be replaced with "wherein .... monomer (A) .....". In claim 1-2 and 8, the use of phrase "obtainable by" renders unclear whether other polymers made using other specified processes are also within the claimed scope. If applicant is intending to specify a polymer which is produced by the recited process, then the phrase "obtained by" should be used. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1, 3-5, 7-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196).

Sugawara et al disclose a cosmetic composition comprising an aqueous polymer emulsion which is produced by polymerizing at least one polymerizable monomer having a double bond (abstract). The monomer having polymerizable double bond may be hydrophilic or hydrophobic monomer (column 2, lines 14-16). Examples of hydrophobic monomers include tert-butyl (meth)acrylate, cyclohexyl (meth)acrylate (column 2, lines 37-47). Examples of hydrophilic monomers include ethylenically unsaturated carboxylic acids such as acrylic acid (column 2, lines 18-20). The polymer preferably has a weight average molecular of 25,000 to 60,000 (column 4, lines 65-67; column 5, lines 2-3). In polymerization of the monomer, a chain transfer agent such as octyl mercaptan may be added (column 4, lines 37-40). See example 1 for method of polymerizing a polymer with a molecular weight of 28,000,  $T_g$  of 52°C and 2.0 parts of the chain transfer agent. See example 2 for method of polymerizing a

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polymer with a molecular weight of 32,000,  $T_g$  of 60°C and 2.5 parts of the chain transfer agent. In nail enamels it is preferred to incorporate the aqueous polymer emulsion in amounts from 1 to 60% by weight (column 6, lines 64-66) and reads on claim 8. See example 6 and 7 where the amount of hydrophobic monomer 2-ethylhexyl acrylate, which is functionally equivalent to cyclohexyl (meth)acrylate and tert-butyl (meth)acrylate, is 27 parts by weight and reads on claim 3.

The prior art differs with respect to the chain transfer agent used.

Jenkins et al teach acrylate polymers (column 3, lines 35-36) having molecular weight of less than about 20,000 which is controlled by a chain transfer agent having chain transfer constant of  $1 \times 10^6$  or greater and are present in the range of from  $2.5 \times 10^{-3}$ . Preferred examples of these chain transfer agents include octyl mercaptan, isooctyl mercaptopropionate and 2-ethylhexyl mercaptoprionate (column 3, 46-64). Therefore, it would have been obvious to one skilled in the art at the time invention was made to control the molecular weight of acrylate polymers to less than about 20,000 using chain transfer agent such as isooctyl mercaptopropionate and/or 2-ethylhexyl mercaptoprionate because Jenkins et al has proven successfully that chain transfer agents such as isooctyl mercaptopropionate and/or 2-ethylhexyl mercaptoprionate can control the molecular weight of acrylate copolymers to less than 20,000 and are functionally equivalent to octyl mercaptan of prior art of Suguwara et al and one

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of ordinary skill in the art would expect isooctyl mercaptopropionate and/or 2-ethylhexyl mercaptopropionate to work, motivated by expectation of success.

As to the limitation of claim 5, Jenkins teaches isooctyl mercaptopropionate as a preferred chain transfer agent which is an isomer of octyl mercaptopropionate. Structural similarities have been found to support a prima facie case of obviousness. See, e.g., *In re May*, 574 F.2d 1082, 1093-95, 197 USPQ 601, 610-11 (CCPA 1978) (stereoisomers); *In re Wilder*, 563 F.2d 457, 460, 195 USPQ 426, 429 (CCPA 1977) (adjacent homologs and structural isomers). Therefore, it would have been obvious to one skilled in the art at the time invention was made to use octyl mercaptopropionate, motivated by expectation of success.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196) as applied to claims 1,4-5, 7-8 and 10 above, and further in view of Furuya (US 6,048,910).

The discussion with respect to Sugawara et al in view of Jenkins et al in paragraph 5 is incorporated herein by reference. Furthermore in the polymerization, a surfactant is added to ensure dispersion stability and includes anionic, cationic and non-ionic surfactants (column 4, lines 14-17).

The prior art of Sugawara et al in view of Jenkins et al is silent with respect to anionic emulsifier having 1 or more radical polymerizable group.

However, Furuya teaches utilization of surfactants in emulsion polymerization that may be any of non-ionic, cationic and anionic surfactants and reactive emulsifying agents having a radical polymerizable functional group (column 13, lines 29-33). . Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to use a reactive emulsifying agents having a radical polymerizable functional group because Furuya has shown that the anionic, cationic and non-ionic surfactants are functionally equivalent to reactive emulsifying agents having a radical polymerizable functional group and one of ordinary skill in the art would expect the reactive emulsifying agents having a radical polymerizable functional group to work because Furuya has proven successfully the utilization of reactive emulsifying agents having a radical polymerizable functional group in emulsion polymerization and one of ordinary skill in the art would expect it to work for the polymerization of aqueous polymer of Sugawara et al in view of Jenkins et al, motivated by expectation of success.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196) as applied to claims 1,4-5, 7-8 and 10 above, and further in view of Yasuhiro (JP 11-269041).

The discussion with respect to Sugawara et al in view of Jenkins et al in paragraph 5 is incorporated herein by reference.

The prior art of Sugawara et al in view of Jenkins et al is silent with respect to the average particle size of copolymer of 30 nm to 100 nm.

However, Yasuhiro teaches an aqueous nail enamel consisting mainly of acrylic resin with an average particle diameter of  $\geq 30$  nm and  $\leq 200$  nm (abstract). If the mean particle diameter is less than 30 nm, viscosity of the nail enamel is too high and may be difficult to apply. On the other hand if the mean particle diameter is greater than 200 nm, ability to form a film and gloss are reduced. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to maintain a average particle diameter of 30 nm to 100 nm which overlaps substantially with the instant claim because Yasuhiro has proven successfully the average particle diameter of 30 nm to 200 nm to work for the aqueous nail enamel composition and one of ordinary skill in the art would expect the average particle diameter of 30 nm to 100 nm to work for the aqueous nail enamel composition of Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196), motivated by expectation of success.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al (5,68,493) in view of Jenkins et al (US 5,739,196) as applied to claims 1,4-5, 7-8 and 10 above, and further in view of Socci et al (US 6,139,822).

The discussion with respect to Sugawara et al in view of Jenkins et al in paragraph 5 is incorporated herein by reference.

The prior art of Sugawara et al in view of Jenkins et al is silent with respect to the lower alcohol having a B.P.  $< 100^{\circ}\text{C}$  in an amount of 0.5 to 15 wt%.

However, Socci et al teach a nail enamel composition that includes aqueous polymers such as acrylic polymers (column 12, lines 51-56) and co-solvents such as isopropyl alcohol, ethyl alcohol and methanol (column 14, lines 24-26). It is noted that boiling points of isopropyl alcohol, ethyl alcohol and methanol are  $82^{\circ}\text{C}$ ,  $78^{\circ}\text{C}$  and  $65^{\circ}\text{C}$  respectively. The co-solvents protect the composition against potential freezing during shipping and storage (column 14, lines 32-34) and the isopropyl content is 6.5 wt% (column 14, line 64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to add an alcohol with a boiling point less than  $100^{\circ}\text{C}$  to the nail enamel composition of Sugawara et al in view of Jenkins et al to realize the above mentioned advantages.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karuna P. Reddy whose telephone number is (571) 272-6566.

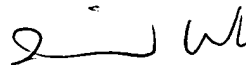
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karuna P Reddy  
Examiner  
Art Unit 1713



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